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## **Final Report for Grant NAG10-0232**

### **Corporate Memory and Spacecraft Course Development**

The Florida Space Grant Consortium (FSGC) entered into a cooperative agreement with NASA's Kennedy Space Center (KSC) to manage two programs, 1) Corporate Memory and 2) Spacecraft Course Development. The FSGC, with its central office at the University of Florida, administered these programs. In conjunction with KSC, the FSGC was responsible for the release of the Request for Proposals (RFP's) and its distribution to all its affiliates. FSGC received the applications, forwarded them to KSC for evaluations, and awarded grants to the institutions chosen by KSC.

#### **1) Corporate Memory**

KSC will be reducing its civil service workforce over the next several years and changing its focus from operations to research and development. As the process occurs, personnel with significant knowledge and experience will leave the Center and change the type of work they do. Loss of this personnel results in KSC losing valuable "corporate memory" regarding space operations.

An effort to capture this knowledge would provide guidance and reference for remaining workers, and an information base which could be utilized by those teaching spacecraft development, processing and operations at the university level.

FSGC issued a grant to Florida International University (PI. Dr. Irma Becerra-Fernandez). The project was titled Knowledge Repository for Kennedy Space Center.

#### ***Program Corporate Memory: Knowledge Repository for Kennedy Space Center***

The drivers of downsizing in most organizations are well understood: rapidly reduce costs in order to survive against competitors. Unfortunately, one of the side effects of downsizing is that it dissipates the "Knowledge Resource" of the organization. Knowledge Management is an increasingly important new business movement that promotes the creation, sharing and leveraging of knowledge within an organization to maximize business results. Effective tools to capture knowledge are essential for KSC to maintain its status as a high tech leader even in the face of government downsizing. In order to reduce the impact of downsizing, this project created the "Knowledge Repository for Kennedy Space Center". This creation required the development of a two phased project: "KSC's Knowledge Directory" and "KSC's Knowledge Base". "KSC's Knowledge Directory" tracks skills that each department has and will need in the future. "KSC's Knowledge Base" consists of a dynamic repository of employee's insights and observations, the corporate memory or knowledge base of the organization. This project defines the appropriate software and hardware architecture that will allow teams at KSC to capture and re-use knowledge, based on the implementation of two complementing technologies: groupware and Intranets.

## 2) Spacecraft Course Development

Many universities across the country have classes in spacecraft operations. Real world practices and procedures are beneficial to these classes as learning tools. KSC is the nation's spaceport, and as such, can offer unique insights into space operations.

The purpose of this program was to develop curriculum material encompassing these KSC activities. The end product was expected to be a handbook or curriculum guide which is a framework for teaching space related classes. Potential topics included spacecraft design, spacecraft processing, integrating and testing space hardware, and space launch systems. In addition, real world knowledge from the corporate memory study will be available to be included. The recipient of the grant, Embry-Riddle Aeronautical University combined the material into usable curriculum materials and activities and made them available around the nation.

### ***FSGC/KSC Grant***

The Space Shuttle Processing course development grant, awarded through the FSGC, was completed on 30 June, 1998. The Internet-based courseware was available for delivery to the Kennedy Space Center on 30 June. However, courseware installation was delayed by the KSC network administrators because of security issues, but is available to the general public at <http://watch.ksc.nasa.gov/ERAU.html> as of this date.

The course development process included three student assistants from Embry Riddle University from January through June, 1998. These students were involved in HTML creation and graphics design in support of the project. One student received an internship with KSC as a result of his efforts on the project.

The Space Shuttle courseware will be linked to numerous sites at the Kennedy Space Center and Embry Riddle University for educational and informational purposes. It is also planned that the courseware be distributed to the state space grant consortia by the KSC University Affairs office.

In summary, the grant and courseware product have been successful in both extending the education elements of, and distributing Shuttle processing information for the Kennedy Space Center.